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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,324	08/27/2003	JB Canterbury	1512 US	5348

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PATENT DEPARTMENT
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EXAMINER


CULBRETH, ERIC D

ART UNIT	PAPER NUMBER
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3616

DATE MAILED: 09/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	<p>Application No.</p> <p align="center">10/648,324</p>	<p>Applicant(s)</p> <p align="center">CANTERBERRY ET AL. </p>	
	<p>Examiner</p> <p align="center">Eric D Culbreth</p>	<p>Art Unit</p> <p align="center">3616</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| <p>1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date <u>11/28/03</u>.</p> | <p>4) <input type="checkbox"/> Interview Summary (PTO-413)
 Paper No(s)/Mail Date. ____.</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6) <input type="checkbox"/> Other: ____.</p> |
|--|---|

DETAILED ACTION

Oath/Declaration

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

The full name of each inventor (family name and at least one given name together with any initial) has not been set forth.

(This refers to JB Canterbury (no given name) and Keith Lam (no initial or full name given for first or middle name). See MPEP 605.04(b).

Specification

2. The disclosure is objected to because of the following informalities: On page 3, in paragraph [0009], line 2 “function” should be “functions”.

Appropriate correction is required.

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: There is no support in the specification for claim 12 (the burst foil being adhered to the combustion chamber).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 3616

5. Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. In claim 1, line 7 “has” should be “having” for proper grammar.
- b. In claim 2, line 3, “is” should be deleted for proper grammar.
- c. In claim 3, line 3, “focuses” should be “focusing” for proper grammar.
- d. In claim 4, line 2 and throughout claims 5-8, “diffuser chamber” would appear to be a misnomer (this would appear to be a combustion chamber as recited later in claims 16-19).
- e. In claim 4, line 2 “receives” should be “receiving” for proper grammar.
- f. In claim 4, line 4 “having” should be “has”.
- g. In claim 11, line 2, “is” should be deleted.
- h. In claim 11, line 2, “of a the” should be “of the”.
- i. In claim 11, line 3, “has” should be “having”.
- j. In claim 16, line 8 “has” should be “having”.
- k. In claim 15 there is no antecedent basis for “the diffuser chamber” (claim 11 recited a combustion chamber).
- l. In claim 8 it is inaccurate to state the longitudinal axes of the filter and cup are parallel (they are coaxial, or on the same axis).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 3616

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 1 as best understood is rejected under 35 U.S.C. 102(b) as being anticipated by O'Driscoll (US Patent 5,716,072).

O'Driscoll discloses an inflator comprising an igniter 7 having an ignition material that burns upon application of heat (column 2, lines 44-46), one gas generant 6 disposed adjacent to the igniter whereby the igniter directly ignites the gas generant, a filter 18 disposed adjacent the gas generant, and a filter housing 13 that receives the entire filter, the housing having a plurality of exit ports 15 arranged around the circumference and aligned with the filter. Gas is produced only from the burning of the ignition material and the gas generant (claim 1).

8. Claim 16 as best understood is rejected under 35 U.S.C. 102(b) as being anticipated by Sheng (US Patent 6,068,290).

Sheng discloses inflator comprising an igniter 100 having an ignition material that burns upon application of heat (column 4, lines 8-13), one gas generant 112, 70, 70 (i.e., one gas generant inasmuch as applicant's illustrated pellets are one gas generant) disposed adjacent the igniter whereby the igniter directly ignites the gas generant, filter 120 adjacent or near the gas generant, and inflator housing 12 that receives the entire filter, the housing 12 having a plurality of exit ports 14 arranged around the circumference thereof whereby the exit ports are aligned with the filter, wherein gas for filling an airbag is produced only from the burning of the ignition material and the gas generant.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 17-19 as best understood are rejected under 35 U.S.C. 103(a) as being unpatentable over Sheng in view of Ruckdeschel et al (US Patent 6,056,319).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sheng to include a generant cup storing the gas generant with an open end of the cup facing the igniter as taught by Ruckdeschel et al (airtight and moisturetight container 24 surrounding the gas generant, with the part above where the upper and lower parts are joined forming the cup with an open end facing igniter 20 inasmuch applicant's cup in Figure 2 is open) in order to protect the gas generant from moisture (claim 17). Regarding claims 18 and 19, as broadly recited, the plurality of exit ports in Sheng (i.e., the exit ports closest to intermediate wall

Art Unit: 3616

26) are closer to the generant cup in the combination than a closed end 24 of Sheng's inflator housing (the exit ports in claim 18 are not claimed in an exclusive manner). Also in Sheng, wall 26 is a choke plate as functionally recited regulating the flow of inflation fluid whereby the choke plate is disposed between the generant cup and filter in the combination.

12. Claims 2-3 as best understood are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Driscoll in view of Ruckdeschel et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify O'Driscoll to include a gas generant cup with an open end facing the igniter and a lid creating an airtight environment forming O'Driscoll's bag 5 as taught by Ruckdeschel et al's cup and lid 24 (the upper part of the container above the connection forming a cup with an open end facing the igniter and the lower part below the connection forming the lid) in order to protect against moisture (claim 2). Regarding claim 3, O'Driscoll teaches a retaining ring on the igniter 7 in Figure 1. Since it surrounds all but the top of the igniter 7 including the portion with squib 8, it would surround the ignition material and focus gaseous products into the lid of the container in the combination. Igniters are notoriously cylindrical, and as the ring closely surrounds the igniter, it would also be cylindrical.

13. Claims 11 and 13-15 as best understood are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Driscoll in view of Simon et al (US Patent 5,611,566).

O'Driscoll teaches the gas generant 6 stored in a combustion chamber 4 and the igniter 7 at one end of the combustion chamber. It would have been obvious to one of ordinary skill in the

Art Unit: 3616

art at the time the invention was made to modify O'Driscoll to include a plurality of apertures at a second end of the combustion chamber as taught by Simon et al in order to lower sound and deposit slag (Simon et al, column 4, lines 39-46) (claim 11). Regarding claims 13-15, the ring retaining the igniter 7 in O'Driscoll's Figure 1 is also an igniter retainer holding the igniter and attached to the first end of the chamber, and Simon et al in the combination teaches as broadly recited exit ports 11 arranged in one row and closer to the combustion chamber as best understood than the closed end of the filter housing (i.e., the row of ports 11 visible in Figure 1).

14. Claims 4-10 as best understood are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Driscoll in view of Ruckdeschel et al as applied to claim 2 above, and further in view of Simon et al.

O'Driscoll's combustion chamber 4 is also a diffuser chamber as broadly recited in that it sends or diffuses gas into housing 13. Bag 5 (which would be Ruckdeschel et al's container in the combination of claim 2 above) would be fully received in the chamber. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify O'Driscoll and Ruckdeschel et al above to include the second end of the chamber having a plurality of apertures as taught by Simon et al's chamber end with apertures 6 in order to lower sound and deposit slag (claim 4). Regarding claim 5, in the combination Simon et al teaches the end of the chamber at 2 in Figure 1 tapering inward closer to the second end of the diffuser chamber, and regarding claim 6, in Figure 2 the chamber wall (cylindrical part 1) tapers inward closer to the first end of the diffuser chamber (i.e., adjacent ignition arrangement 20). In regard to claim 7, in O'Driscoll, the primary reference, the filter housing is telescopically inserted into

Art Unit: 3616

the diffuser chamber, and telescoping the chamber into the filter housing would involve an obvious reversal of parts (case law (In re Japiske, 86 USPQ 70 (CCPA 1950) holds that there is no invention in shifting parts to a different position if the operation of a device is not modified). In O'Driscoll, the primary reference, the longitudinal axis of the bag 5 (which would be Ruckdeschel et al's cup in the combination) is parallel to (coaxial with?) the longitudinal axis of the filter. In the combination, Simon et al states at column 3, lines 29-32 that disk 10 "may" be included. Absent the disk, the one end of the filter in the combination would contact the second end of the diffuser chamber, and case law (In re Karlson, 136 USPQ 184 (CCPA 1963)) holds that omission of an element and its function in a combination is an obvious expedient if the remaining elements perform the same function (claim 8). Regarding claims 9-10, in the combination the row of exit ports in Simon et al adjacent the combustion chamber (the row of ports 11 visible in Figure 1) are closer to the diffuser chamber than the second end of the filter housing.

15. Claim 12 as best understood is rejected under 35 U.S.C. 103(a) as being unpatentable over O'Driscoll in view of Simon et al as applied to claim 11 above, and further in view of Sheng.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify O'Driscoll and Simon et al above to include burst foil adhered to include burst foil on the apertures leading from the second chamber to the filter area as taught by Sheng in order to build pressure in the combustion chamber (Sheng, column 3, lines 1-5). As adhering

Art Unit: 3616

does not have appeared to have been disclosed in the specification, Sheng meets the positive limitations of the claim regarding the foil. At any rate, adhering foil is notorious in the art.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Canterbury et al (US Patent 6, 149,193) teaches adhering foil at column 6, lines 23-32).

Stevens et al (US Patent 5,645,298) discloses a retaining ring 506 in Figure 21 and a round igniter in Figure 18.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric D Culbreth whose telephone number is 703/308-0360. The examiner can normally be reached on Monday-Thursday, 9:30-7:00 alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dickson can be reached on 703-308-2089. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3616

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eric D Culbreth
Primary Examiner
Art Unit 3616



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